



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/576,492	05/23/2000	Kyoichi Nariai	047991-5007	3041

9629 7590 08/29/2003

MORGAN LEWIS & BOCKIUS LLP
1111 PENNSYLVANIA AVENUE NW
WASHINGTON, DC 20004

EXAMINER

ADDISON, KAREN B

ART UNIT PAPER NUMBER

2834

DATE MAILED: 08/29/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/576,492	Applicant(s) NARIAI, KYOICHI	
	Examiner Karen B Addison	Art Unit 2834	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 May 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 1-6, 7-11 are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 9-11 is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

Allowable Subject Matter

1. Claims 9-11 are allowed. Prior art fails to show (fig.13) A piezoelectric element driving circuit for driving a plurality of piezoelectric elements disposed in a plurality of head units, comprising: a plurality of power amplifiers for driving the plurality of piezoelectric elements disposed in the plurality of head units; a plurality of first switch devices, disposed corresponding to said plurality of power amplifiers, having a plurality of connection/disconnection switches whose input side is short-circuited.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-8 rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant Prior Art in view of Juve (6,039,428).

Applicants Prior Art discloses in fig.3 A piezoelectric element driving circuit for driving a plurality of piezoelectric elements disposed in a plurality of inkjet head units (4), comprising: a power amplifiers (2) for driving the plurality of head units (4,y, m, c, k); a flexible flat cables (3) disposed between said power amplifiers and the plurality of head units for connecting the plurality of inkjet head units and said power amplifiers; and a drive waveform signal generating circuit (1) for supplying a drive waveform signal to

said power amplifiers and the plurality of inkjet head units, wherein each of the plurality of head units has: a switch device for supplying a piezoelectric element current to the plurality of piezoelectric elements, wherein said plurality of power amplifiers are disposed corresponding to the plurality of head units, said plurality of power amplifiers supplying a drive waveform signal that is input from said drive waveform signal generating circuit to said plurality of power amplifiers through said plurality of flexible flat cables so as to drive the plurality of inkjet head units. Wherein, the head units are yellow, magenta cyan and black. Applicant prior art does not show a plurality of amplifiers, and flexible flat cables connected a plurality of head units.

Juve (6,039,428) teaches (fig.3) the concept of using multiple amplifiers (D1, D2, D3) and flex cables circuits (102) to drive each associated inkjet head units (50-56) for the purpose of improving the reliability of the print head. Therefore, It would have been obvious to one having ordinary skill in the art at the time the invention was made to use a plurality of amplifiers and flexible flat cables, since it has been held that mere duplication of essential working parts of a device involves only routine skill in the art. ST. Regis Paper CO. v. Bemis Co., 193 USPQ 8.

Response to Arguments

3. Applicant's arguments filed 5/27/03 have been fully considered but they are not persuasive.

In response to the applicant argument that Juve fails to teach or suggest the claim multiple amplifiers, flexible flat cables to drive a plurality of inject head units is noted.

However, Juve disclose in col. 13 lines 4-6 that buffer amplifiers are another means for electrically isolating the data lines (D1, D2, D3). Therefore, Juve teaches the concept of multiple amplifiers (D1, D2, D3). Juve also clearly shows flex cables (102) driving each associated inkjet head (50-56) in fig. 3.

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

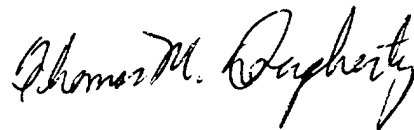
the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karen B Addison whose telephone number is 703-306-5855. The examiner can normally be reached on 8:00 to 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on 703-308-1317. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-0956 for regular communications and 703-308-0956 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

KBA
August 13, 2003



8